

PlexusAV P-AVN-4

Firmware Version 1.4.0 Release Notes

January 13, 2025 - v1

Contents

Introduction.....	3
New features	4
Encoder Mode: Daisy-Chain	4
Serial / RS232 IP Tunneling Mode	6
HDMI CEC / RS232 API (ASCII & HEX)	7
HDR Support on H.26x coding.....	8
Latency Improvement on H.26x Coding	8
AVN REST API Expansion	8
ECO Mode.....	9
Manual/Advanced EDID Settings: Pre-Defined List Update	10
Bug Fixes	11
Upgrade procedure	12
Upgrade with Local P-AVN-4 WebUI.....	12
Batch upgrade with Visual Array	13

Introduction

This document covers software version 1.4.0 of PlexusAV P-AVN-4.

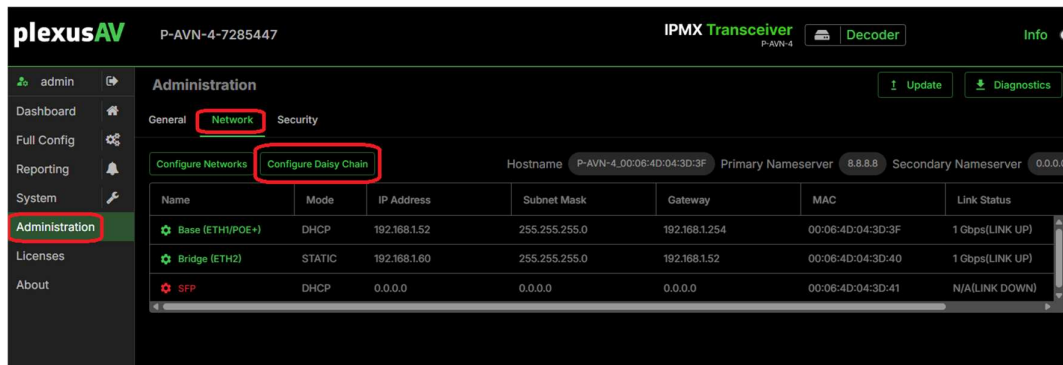
Firmware for all PlexusAV products is aligned, meaning that all devices running 1.4.x firmware will work together seamlessly.

New features

Encoder Mode: Daisy-Chain

P-AVN-4 Devices can be configured for Daisy Chaining. To enable Daisy Chaining, go to:

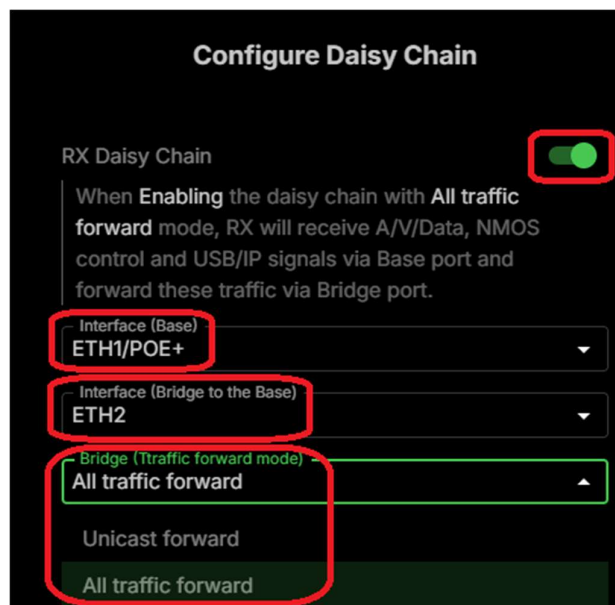
Administration -> Network -> Configure Daisy Chain



Forwarding is based on:

- Base Network Interface: the interface receiving the audio / video
- Bridged Network Interface: the interface forwarding the audio / video

You can choose between “Unicast Forward” or “All Traffic Forward”. “All Traffic Forward” includes Multicast Traffic and “Unicast Forward” does not. Multicast is typically used for Audio and Video.



You don't need to assign an IP address to the Bridge Interface. An P-AVN-4 internal, virtual Ethernet switch connects it to the Base Interface when Daisy Chain is enabled.

Name	Mode	IP Address
Base (ETH1/POE+)	DHCP	192.168.1.52
Bridge (ETH2)	STATIC	192.168.1.60
SFP	DHCP	

Note: Make sure your Network Hosts (IP Devices) connected to both Base and Bridge Port reside in the same IP Subnet (IP Range).

Daisy Chaining Audio / Video Considerations: In Daisy Chain mode it's easy to oversubscribe the 1Gbps Ethernet links between the P-AVN-4's. This can happen if you route the daisy chained receivers to different streams.

Our recommendation:

- JPEG-XS (Lite Compression): route all daisy chained receivers to the same stream
- H.26x (High Compression): route all daisy chained receivers to a maximum of 10 different streams
- Make sure that a user cannot oversubscribe the links e.g. by programming routing restrictions in your Control System.
- Limit the number of Daisy Chaining receivers to 16

Warning: Do not connect the Base and Bridge port to the same Ethernet Switch. This will effectively cause a network loop resulting in network congestion and potential failure.

Serial / RS232 IP Tunneling Mode

Version 1.4.0 supports RS232 control over IP via SSH. What this means is the P-AVN unit can be configured so the serial port (5-PIN Phoenix Port) on the back panel can be controlled remotely over the network using an SSH command line session.

IP Serial Tunneling

- Specify on Transceiver**
 - Dedicated Socket / Port, e.g. 1234
 - Serial settings, e.g. Baud Rate
- Open SSH session to this socket**

```
C:\Users\jerome>ssh -p 1234 admin@192.168.1.10
ubuntu@192.168.1.102's password:
Welcome to ubuntu 20.04.2 LTS (GNU/Linux 6.1.30 aarch64)
ubuntu@P-AVN-4909640943728:~$
```
- Send and Receive Serial Data**
 - Send serial data: `ubuntu@P-AVN-4909640943728:~$ \x08\x22\x09\x09\x82\xD4`
 - Receiver serial data: `ubuntu@P-AVN-4909640943728:~$ \x08\x22\x09\x09\x82\xD4`

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RS232 Serial Configuration

Mode: ☐ RS232 over IP ☒ RS232 IP Tunnel

Port: 5600

User: serialuser

Password: PlexusAV@2023

RS232 Setting

Serial Speed(bps): 115200

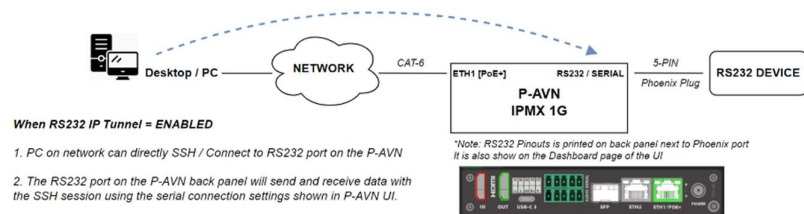
Serial Data Bits: 8bit

Serial Stop Bits: 1bit

Serial Flow Control: None

Serial Parity: None

Apply



To access the RS232 Serial Configuration Page:

- Step 1.) Login to P-AVN device (admin/proav101)
- Step 2.) Click on Full Config button in Navigation Pane
- Step 3.) Click on RS232 Serial Configuration

plexusAV CH3

admin

Dashboard

Full Config

Reporting

System

Main Configuration

LC Stream Video Processing

LC Stream Output

HC Stream Video Processing

HC Stream Output

USB

EDID Configuration

HDMI CEC

RS232 Serial Configuration

RS232 Serial Configuration

Mode: ☒ RS232 over IP ☐ RS232 IP Tunnel

☒ Preset ☐ Direct

Send

RS232 TX

RS232 RX

RS232 Setting

Serial Speed(bps): 115200

Serial Data Bits: 8bit

Serial Stop Bits: 1bit

Serial Flow Control: None

Serial Parity: None

Apply

HDMI CEC / RS232 API (ASCII & HEX)

Both ASCII and HEX command formats are supported for HDMI CEC control. Depending on environment, you may want to switch between HEX and ASCII text formats. This setting directly reflects the RS-232 I/O on the P-AVN device.

Users can enable **Hex Mode** or disable it to use ASCII commands.

The screenshot shows the 'RS232 Serial Configuration' interface. On the left, there are settings for Mode (RS232 over IP selected), Interface (ETH1), RS232 TX (Preset selected), RS232 RX, and RS232 Setting (Serial Speed, Data Bits, Stop Bits, Flow Control, Parity). An 'Apply' button is at the bottom left. A modal dialog titled 'Add Command' is open in the center. It contains a 'Command Name' field with 'PWR ON', a 'Hex Mode' toggle switch that is turned on, and a 'Command' field with '0x A55A0110016F'. 'Cancel' and 'Confirm' buttons are at the bottom of the dialog.

This screenshot shows the same 'RS232 Serial Configuration' interface. The 'Add Command' modal dialog is open, but with different values. The 'Command Name' is 'MUTE OFF', the 'Hex Mode' toggle switch is turned off, and the 'Command' field contains 'MUTE OFF<CR>'. The 'Cancel' and 'Confirm' buttons remain at the bottom of the dialog.

HDR Support on H.26x coding

Support HDR pass-through on H.26x encoding/decoding.

Latency Improvement on H.26x Coding

The end-to-end latency is reduced to two frames (33ms) end-to-end with optimized settings.

AVN REST API Expansion

Version 1.4.0 introduces the following new REST API features:

- TX and RX Scaler settings
- RX seamless switching settings
- SCG compatibility mode
- Volume Control
- HDMI Loop-Out = DISABLED
- HDMI Output (no signal) = SLATE (Stored Image in FW)
- Unit ID = Status LED flash/toggle (ENABLED/DISABLED)
- Test Mode = Color-Bar Test Pattern Output (DEC = HDMI, ENC = IP Pattern)
- Dark Mode = Turn off LED rings on front panel
- Codec: H.264 / H.265 / Bitrate
- Audio codec: Auto / Passthrough / AAC Main / AAC LC / Bitrate
- EDID settings
- Reboot
- Encoder / Decoder mode changes
- Remotely setting the IP address of VA / NMOS Registry in the transceiver config
- Changing NMOS names

ECO Mode

A new **ECO Mode** has been introduced to reduce power consumption. To access this feature click **Administration**, then **ECO-MODE Toggle Button** (enabled).

This will turn off HDMI Input/Output processing, as well as Encoding/Decoding live streaming and USB ports on the P-AVN device. Thus lowering power utilization to minimum when in “stand-by” state, ECO-MODE = ENABLED.



When **ECO Mode** is enabled:

- Only Web UI and API remain active
- The following interfaces and functions are disabled:
 - HDMI input/output
 - USB ports
 - H.26x encoding/decoding
 - Stream input/output and other unnecessary interfaces

Manual/Advanced EDID Settings: Pre-Defined List Update

2-channel audio preset is now available in addition to the original 8-channel option. To access this feature, open the P-AVN web-interface to Default / Dashboard UI Page.

- Step 1.) Click Full Config
- Step 2.) Click EDID Configuration
- Step 3.) Click Pre-Defined

Encoder Mode:

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admin

Dashboard

Full Config

Reporting

System

Main Configuration

LC Stream Video Processing

LC Stream Output

HC Stream Video Processing

HC Stream Output

USB

EDID Configuration

HDMI CEC

RS232 Serial Configuration

EDID Configuration

Mode ☐ Default ☒ Pre-defined ☐ Copy ☐ Custom

1080p60 LPCM 2ch HDR Apply

Video 1920x1080p 60Hz HDR

Audio LPCM 2ch

Vendor PLA-A019

Product plexusAV

EDID Configuration

Mode ☐ Default ☒ Pre-defined ☐ Copy ☐ Custom

1080p60 LPCM 2ch HDR Apply

1080p60 LPCM 2ch HDR

1080p60 LPCM 2ch Non-HDR

1080p60 LPCM 8ch HDR

1080p60 LPCM 8ch Non-HDR

4Kp60 LPCM 2ch HDR

4Kp60 LPCM 2ch Non-HDR

4Kp60 LPCM 8ch HDR

4Kp60 LPCM 8ch Non-HDR

720p60 LPCM 2ch HDR

720p60 LPCM 2ch Non-HDR

720p60 LPCM 8ch HDR

720p60 LPCM 8ch Non-HDR

Decoder Mode:

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admin

Dashboard

Full Config

Reporting

System

Main Configuration

IP Input

Video Processing

EDID Configuration

HDMI CEC

RS232 Serial Configuration

EDID

Video 3840x2160p 30Hz HDR

Audio LPCM 8ch

Vendor SAM-71B4

Product SAMSUNG

Download this EDID

Bug Fixes

- Regarding HTTPS and Web-Interface Access:
 - If P-AVN is 1.3.0 = web-access requires HTTPS:// prefix in browser URL
 - If P-AVN is 1.4.0 or newer = HTTP or HTTPS may be used for web-interface
 - New devices generate a unique self-signed certificate at the factory
- NMOS Registry Sync Enhancement = Updated NMOS registry priority
- Bugfix for settings profile save
- Minor Improvements/Optimizations

Upgrade procedure

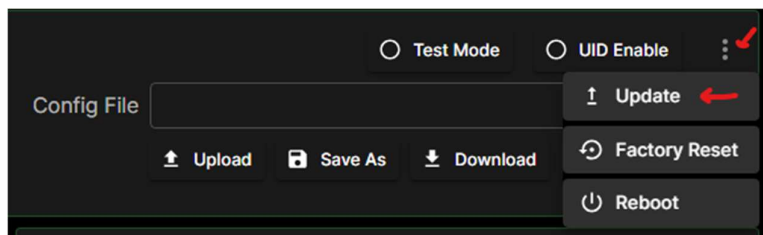
There are two ways to upgrade the P-AVN-4 firmware:

1. Using P-AVN-4 local WebUI
2. Using Visual Array: upgrading multiple P-AVN-4 units in one go

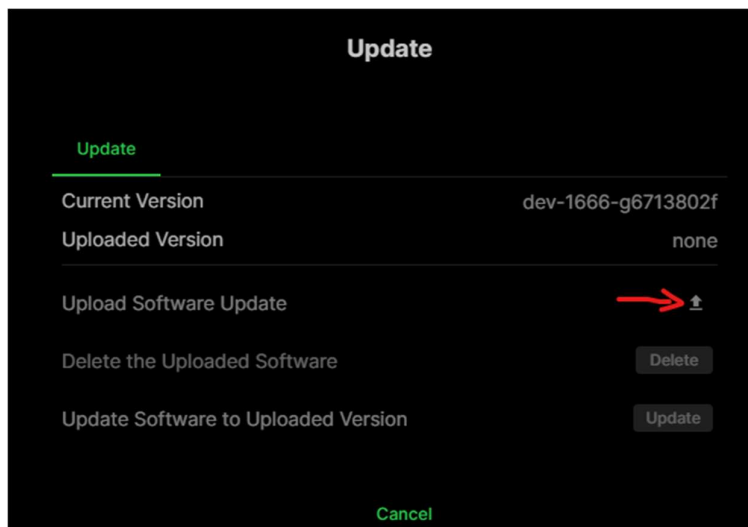
We will cover both ways of upgrading.

Upgrade with Local P-AVN-4 WebUI

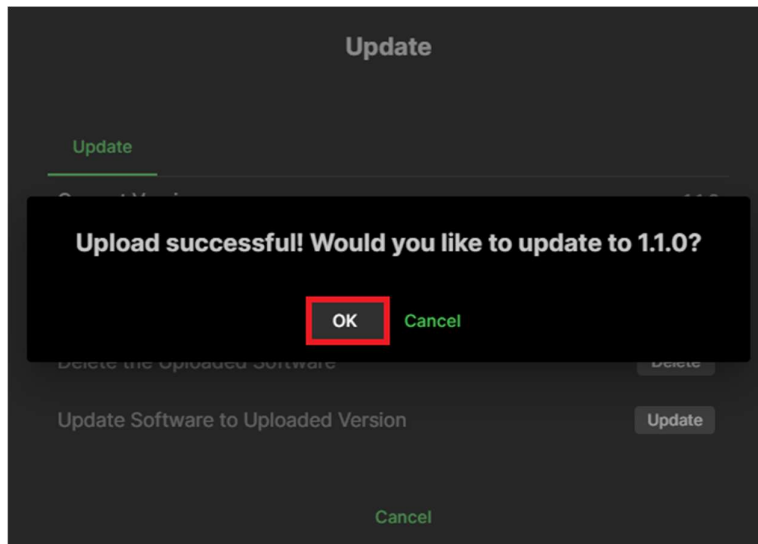
Log into the unit and look for the ellipse on the right side of the web UI. Click it, then click “Update”.



Click the “Up-arrow” icon to open a window to select the update.

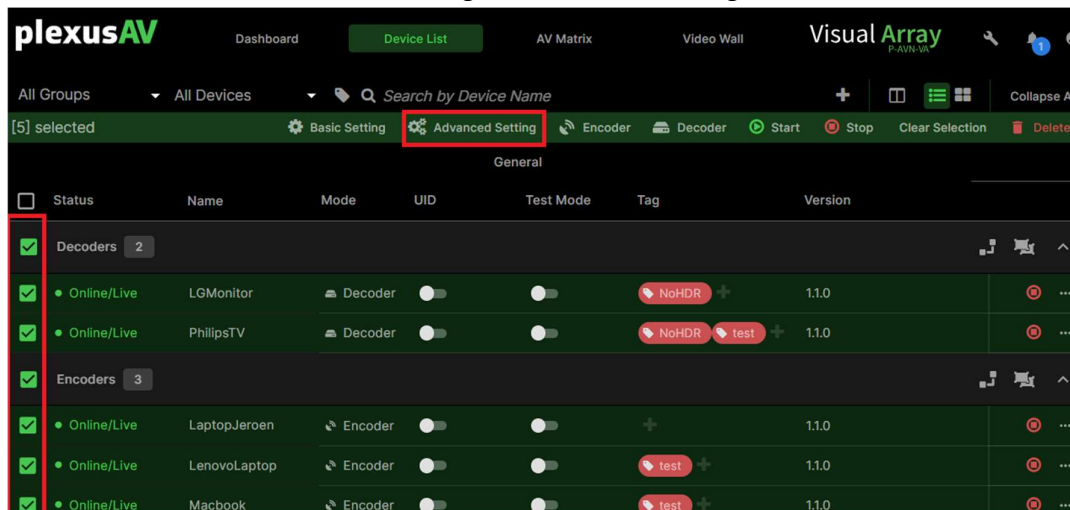


Select the update file and click “Open”. Then click “OK” to upgrade.



Batch upgrade with Visual Array

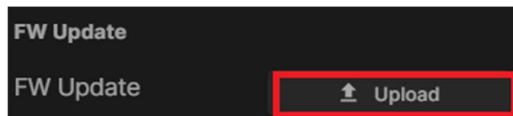
Select all transceivers in device list and go to “Advanced Settings”:



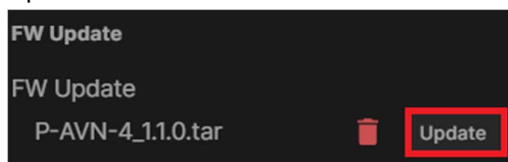
Delete any existing VA uploaded firmware (if there is any existing firmware) by clicking the bin button:



Click upload to upload the firmware to VA:



Update the units:



If all units are ready (100%), leave the advanced settings by clicking “Cancel”.